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ENVIRONMENTAL QUALITY

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RE: **DEQ's statewide demonstration of substantial and widespread economic impacts**

At our meeting on April 22, 2011, DEQ and EPA discussed a general framework for how DEQ will demonstrate substantial and widespread (S&W) economic impacts that would almost certainly result from municipalities and private facilities in Montana having to meet base numeric nutrient standards today. DEQ intends for this work to be done on a statewide basis. DEQ has developed both nitrogen (N) and phosphorus (P) criteria and is intending to introduce both to the Board of Environmental Review for adoption. Since both parameters are directly responsible for eutrophication, DEQ believes that, for purposes of the S&W analysis, N and P should be considered together rather than on an individual basis. Below, we outline the process we plan to use to assess statewide S&W impacts. We then summarize why considering N and P collectively makes the most sense. Steps to demonstrating S&W economic impacts from meeting nutrient criteria include:

1. Draw a stratified random selection of permits from large, medium, and small municipal dischargers. This would include both lagoons and mechanical plants. Also select a similar cross-section of private dischargers (likely based on flow). DEQ performed a municipal sample selection 3 years ago when we did a %MHI analysis; we may be able to leverage that work.

2. Determine, as best possible, current discharge quality from the selected facilities, and the receiving streams' low-flow volume and water quality. Apply the numeric nutrient criteria. If facilities cannot currently meet those criteria, as we expect will be the case, determine the approximate technological level and cost to upgrade facility to meet the criteria. Cost and technology upgrade costs will be drawn largely from Utah's cost study (CH2MHill 2010), information provided by ICF International (Hartman and Cleland, 2007) which includes Chesapeake Bay targets and costs, and EPA's municipal nutrient-removal technologies documents (USEPA, 2008a, 2008b). In some locations the criteria will not be attainable even at the limits of technology (LOT) and, therefore, the cost of LOT will be the endpoint.

3. Compare facility upgrade costs, by SB 367 category, to the economic thresholds in the Midwest cost study (Ohio EPA 1997). This study was used to demonstrate S&W economic harm due to meeting stringent Hg standards. Dollar values in Ohio EPA (1997) considered to cause economic harm will be inflation adjusted for appropriate comparison to the later reports using the Consumer Price Index. If the costs of meeting nutrient criteria for a given facility in Montana are greater than those in the Ohio study, adjusted for inflation, then the costs will be considered substantial and widespread.

4. Use any additional economic indices agreed upon to aid in this analysis (e.g., comparison to median MT household income). These may apply to only a sub-segment of our study group.

EPA stated in our meeting (April 22nd) that variances from water quality standards due to S&W economic harm have only been granted on a pollutant-by-pollutant basis. DEQ believes that nutrient standards, and variance from them, should not be viewed this way. The scientific consensus grows daily; if nutrient problems are to be controlled, N and P both need to be addressed. DEQ agrees with this, which is why we are recommending criteria for both. In the case of nutrients, EPA should be adaptable in its policy and allow for dual-pollutant consideration as we refine the variance implementation process.

If facilities are to upgrade for both N and P removal, this must be given consideration at the outset. This is because facilities must be purposefully planned and built to optimize N and P removal. The unit processes for N and P removal are typically interconnected where biological P removal is utilized. There are numerous established configurations and sequencing of the unit processes that are used to meet specific outputs. Except in the limited, specific case where a treatment system is designed for biological N removal and chemical P removal, there is no distinct separation of project elements. Therefore, we will include N and P simultaneously in our economic determination.

Please feel free to comment or make recommendations on the approach we have outlined above. We would like to begin this analysis ASAP.

REFERENCES

Hartman, P., and J. Cleland. 2007. Wastewater Treatment Performance and Cost Data to Support an Affordability Analysis for Water Quality Standards. Prepared for MT DEQ by ICF International, Lexington, MA; May 31, 2007.

Ohio EPA, 1997. Assessing the Economic Impacts of the Proposed Ohio EPA Water Rules on the Ohio Economy. Prepared by the Ohio EPA, Division of Surface Water, the Foster Wheeler Environmental Corporation, and DRI/McGraw-Hill; April 24, 1997.

CH2MHill, 2010. Final Report: Statewide Nutrient Removal Cost Impact Study. Prepared for the Utah Division of Water Quality; October 2010.

USEPA, 2008a. Municipal Nutrient Removal Technologies Reference Document, Volume I, Technical Report. Prepared for USEPA, Office of Waste Water Management, by Tetra Tech, Inc., under U.S. Environmental Protection Agency (EPA) Contract EP-C-05-046. EPA 832-R-08-006, September 2008.

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